

THE GENERIC, SPECIFIC AND LOWER CATEGORY NAMES OF THE NEARCTIC BUTTERFLIES

PART 1 — *The Genus Pieris*

PADDY McHENRY

1032 E. Santa Anita, Burbank, California

PREFACE

INTRODUCTION

The author has asked that I write a brief introduction to this, the first of a series of compilations of generic, species and lower category names of the Nearctic butterflies. The objects of the work are (1) to give a complete list of all the names proposed for the butterflies of the Nearctic region from the year 1758 until the date of publication of the list, (2) to indicate the date and place where originally published, (3) to indicate the types of the genera, species and lower category names where known, (4) to indicate the type locality in the original author's words for types, except those for the generic names, and (5) to indicate the location where types have been deposited where indicated by the author.

The biological application of these names so indicated is not to be attempted in this series. Instead, this effort is left to the individual who makes a comprehensive study of the biology of the groups concerned, such a person rarely having the time and inclination to make the detailed and laborious studies of nomenclature as such. There is urgent need for a work such as this even in a field as well civilized as the Lepidoptera; in fact, this kind of work is so long overdo that the civilized state is rapidly reverting to chaos. Each new volume which appears from the press on this group of insects plows under well established names with no reason given to justify such destruction. A most valuable start in the direction of making reason out of chaos was started by Francis Hemming in his "The Generic Names of the Holarctic Butterflies" published in 1934. This work is proceeding also in the same direction.

When the various parts of this work are completed, it is expected to reissue the whole as a separate volume. Then, perhaps we can prevail upon Mr. McHenry to go on to a similar effort with the moths.

WILLIAM HOVANITZ

EACH ENTRY for the generic names includes the following: the name, the author's name, the most accurate determinable publication date, the bibliographical reference (including the volume or subvolume for the date indicated), the type species, the selection of the type species and the supporting data to justify the type indicated.

Each entry for the specific names includes the following: the name as originally given, the author's name, the most accurate determinable publication date, the bibliographical reference, data on type locality, sex, season, etc., other spellings of the name and notations of any homonym.

The date of publication of a name is indicated in a manner that shows its relative accuracy; for example, "mailing" and "release" dates if known are given preference over "publication" dates if they are not the same. All dates are given in English and normally in the sequence of day, month and year. Where more than one date is indicated, the more accurate one is given after the less accurate one. Dates ascertained directly from a source whose purpose was the determination of time of publication of a work are given without brackets; others, ascertained less directly are given in brackets and explained in a footnote. Combinations of dates with and without brackets may be given when necessary.

I have seen originals or photostats of all references except as noted but have been unable to ascertain the contents and dates for the various parts of Verity's *Rhopalocera Palaeartica*.

The names of the genus *Pieris* are listed under the five species indicated, since in this genus the separation does not involve great difficulty. I have been aided in this regard by William Hovanitz, or by reference to the original description. Should these be in error, no harm is done since the total list, not the biological interpretation of the categories to which the names applied, is the purpose of the listing.

Should anyone find names which have been inadvertently omitted from this listing, a great service will be rendered to so notify the author or the editor of this fact so that corrections may be made.

I take this opportunity to express my gratitude for the use of facilities and to the staffs at the Allan Hancock Foundation Library of the University of Southern California, and at the Los Angeles County Museum Library & Entomological Department. A debt of gratitude is tendered to the photographic service sections of the U. S. Department of Agriculture Library, Harvard College Library, New York Public Library, University of California Library and Cornell University Library. An extended exchange of correspondence with Mr. C. F. DosPassos has been most helpful.

LIST OF GENERIC NAMES USED OR AVAILABLE FOR PIERIS

ASCIA Scopoli.

Type: *monuste* L.

MANCIPIUM Hübner.

Type: *hellica* Hübner = *hellica* L. = *helice* L.

PIERIS Schrank.

Type: *brassicae* of var. authors = *brassicae* L.

ANDROPODUM Hubner.

Type: *brassicae* Hübner = *brassicae* L.

GANORIS Dalman.

Type: *brassicae* L.

TACHYPTERA Berge

Type: *brassicae* L.

PONTIA Fabricius.

Type: *daplidice* Fab. = *daplidice* L.

SYNCHLOE Hübner.

Type: *callidice* Butler = *callidice* Esper = *callidice* Hubner

ASCIA SCOPOLI. 1777. *Introd. Hist. Natur.*: 434, no. 175. Includes among others no. 80 (= "*P. D. [C.] monuste*" of Linnaeus, 1767) which in turn is *Papilio D. C. monuste* Linnaeus, 1764.

Type *Papilio D[anaus]. [Candidus]. monuste* Linnaeus. 1764. *Museum Ludovicae Ulricae* (II): 237, no. 56.

Type Selection. Scudder. 1872 [in or pre-June]¹. *Syst. Rev. Some Amer. Butt.*, p. 40. Says of *Ascia*: "*Type Papilio monuste* Linn."

MANCIPIUM HÜBNER. [1 Jan. 1807] - [19 Dec. 1807]². *Samm. Exot. Schmett.* 1: pl. [141], ff. 1-4. Gives "*Mancipium vorax hellica*". As used by Hübner, *hellica* is considered to be *hellica* Linnaeus, 1767 which in turn is *helice* Linnaeus, 1764.

Type. *Papilio D[anaus]. [Candidus]. helice* Linnaeus. 1764. *Museum Ludovicae Ulricae* (II): p. 243, no. 62.

Type Selection. Hübner. As above. Gives only *hellica*, at the time, which becomes the type.

PIERIS SCHRANK. 1801. *Fauna Boica* 2(1): 152, no. 198; 2(1): 160-170, nos. 1283-1296. Includes *Pieris brassicae* which he says is *Papilio brassicae* of Goeze, Borkhausen, Brahm, and Esper. Of these authors, *brassicae* is considered to be *brassicae* Linnaeus, 1758.

Type. *P[apilio]. D[anaus]. [Candidus] brassicae* Linnaeus. 1758. *Syst. Nat.* 10th Ed. 467-468, no. 58.

Type Selection. Latreille. 1810. *Consid. Gén. Anim. Crust. Arach. Ins.* p. 440. Says: "*Pieride. Pontia brassicae, Fab.*". As used by Latreille, *brassicae* Fabricius is considered to be *brassicae* Linnaeus, 1758.

ANDROPODUM HÜBNER. 1822. [post 22 Sept.].³ *Syst.-Alph. Verz.* pp. 2-5, 7-9. Includes "*Brassicae* L. 401-403. *Andropodum vorax.*"

Type. *P[apilio]. D[anaus]. [Candidus] brassicae* Linnaeus. 1758. *Syst. Nat.* 10th. Ed. 1:467-468, no. 58.

Type Selection. Hemming. Sept. 1933. *Entomologist*: 66(844): 199. Says of *Andropodum*: "*Type = Andropodum brassicae* Linn."

GANORIS DALMAN. 1816. *Kongl. Vetenskaps Academiens Handlingar* 1816(1): 61-62, no. 8; 1816(1): 86-90, nos. 1-10; tablet 1, no. 8; tablet 2, no. 8. Includes *G. brassicae* in which he cites Linnaeus *Fauna Sv.*, pp. [269]-[270], no. [1035]¹ (this is *brassicae* Linnaeus, 1761, which is *brassicae* Linnaeus, 1758).

Type. *P[apilio]. D[anaus]. [Candidus] Brassicae* Linnaeus. 1758. *Syst. Nat.* 10th Ed. 1:467-468, no. 58.

Type Selection. Dalman. As above. Says of *Ganoris*: "*Generis Typus: Pap-brassicae*".

- TACHYPTERA BERGE. 1842. Schmetterlingsbuch, p. 19, pp. 92-105.
 Not seen, given as per Hemming, 1934.
 Type. *Papilio*, *D[anaus]*, [*Candidus*] *brassicae* Linnaeus. 1758. Syst. Nat. 10th. Ed. 1:467-468, no. 58.
 Type Selection. Hemming. Feb. 1934. Entomologist: 67(849):38. Says of Tachyptera: "Type = *Papilio brassicae* Linn., 1758."
- PONTIA FABRICIUS. 1807. In Illiger. Magazin für Insektenkunde. 6: 283, no. 23. Includes: "*Pap* . . . *Daplidice*". As used by Fabricius *daplidice* is considered to be *daplidice* Linnaeus, 1758.
 Type. *Papilio*. *D[anaus]*. [*Candidus*] *daplidice* Linnaeus. 1758. Syst. Nat. 10th Ed. 1:468, No. 2.
 Type Selection. Curtis. 1824. Brit. Entom. 1: pl. 48. Not seen, given as per Hemming, 1934.
- SYNCHLOE HÜBNER. 1818 [post 22 Dec.]⁴. Zutr. Samm. Exot. Schmett. 1st. 100 (text in 1): p. 26, under no. 76. (*Synchloe autodice*). Includes "*S. callidice*". Refers to his earlier publication of this butterfly.
 Type. *Papilio callidice* Hübner. [24 Dec. 1799] - [13 Apr. 1800]⁵. Samm. Europ. Schmett. (Papiliones): plate 81, figs. 408-409. Page 63, no. 5 and plate 108, figs. 551-552 were published later.
 Type Selection. Butler. 12 Sept. 1870. Cistula Ent. 1(3):51. Says of *Synchloe*: "Type *S. callidice* Esper". As used by Butler *callidice* Esper is considered to be *callidice* Hübner [24 Dec. 1799] - [13 Apr. 1800].

LIST OF SPECIES AND LOWER CATEGORY NAMES
 USED OR AVAILABLE FOR PIERIS

1. P. (PONTIA) BECKERII EDWARDS.
beckerii Edwards.
gunderi Ingham.
pseudochloridice McDunnough.
2. P. (PONTIA) SISYMBRII BOISDUVAL.
elivata (B. & B.).
flava Edwards.
flavitincta Comstock, J. A.
sisymbrii Boisduval.
transversa (B. & B.)
3. P. (PONTIA) PROTODICE BOISDUVAL & LECONTE
calyce Edwards.
nasturtii Edwards (Bdv. Ms.).
nelsoni Edwards.
occidentalis Reakirt.
protodice Boisduval & LeConte.
vernalis Edwards.
4. P. (PIERIS) NAPI (LINNAEUS).
acadica Edwards.
aestiva Edwards.
arctica Verity.
borealis Grote.
casta Kirby.

- castoria* Reakirt.
cottlei Gunder.
cruciferarum Boisduval.
flava Edwards.
flava Edwards.
frigida Scudder.
bulda Edwards.
hyemalis Edwards.
iberides Boisduval.
macdunnoughii Remington.
marginalis Scudder.
microstriata Comstock, J. A.
mogollon Burdick.
napi (Linnaeus).
nasturtii Boisduval.
ochsneimeri Staudinger.
oleracea Harris.
pallida Scudder.
pallidissima B. & McD.
pseudobryoniae Verity.
pseudoleracea Verity.
pseudonapi B. & McD.
resedae Boisduval.
venosa Scudder.
virginiensis Edwards. 1870.
virginiensis Edwards. 1881.
5. P. (PIERIS) RAPAE (LINNAEUS).
- aestivus* Verity.
immaculata De Selys-Longchamps.
immaculata Cockerell.
immaculata Skinner & Aaron.
metra Stephens.
novangliae Scudder.
rapae (Linnaeus).
yreka Reakirt.
1. PIERIS (PONTIA) BECKERII EDWARDS.
- beckerii* *Pieris* Edwards. [Sept. 1871]⁶. Butt. N. Amer. 1(8) : [28a] - [29]; plate [81], figs. 4-7. ♂ & ♀. described. "Virginia City, Nevada, April 1870." "Four individuals". McDunnough, 1 Dec. 1928, spells *beckeri*.
gunderi, *Ascia beckerii* Ingham. 14 Apr. 1933. Pan-Pacific Ent. 9(2) : 75. Holotype ♀ : "Bouquet Canyon, Los Angeles County, Calif". "Bred from larva". "emergence date June 21, 1932". Type deposited: Calif. Acad. Sci., San Francisco, Calif.
pseudochloridice, *Pieris beckeri* McDunnough. 1 Dec. 1928. Can. Ent. 60(11) : 266-267. Holotype ♂ : "Oliver, B[ritish]. C[olumbia], April 24 . . . No. 2861 in the Can. Nat. Coll., Ottawa". Allotype ♀ : "Oliver,

- B.C., April 22". Paratypes — 1 ♂; "Hedley, B. C., May 15". 1 ♀; "Osoyoos, B.C." 1+; "Osoyoos, B.C."
2. **PIERIS (PONTIA) SISYMBRII BOISDUVAL.**
elivata, *Ascia sisymbrii* Barnes & Benjamin. 8 Dec. 1926. Bull. Sou. Calif. Acad. Sci. 25(3):88, no. 33a. "Type locality: Glenwood Springs, Colo.". "Number and sexes of types: Holotype ♂ May 1895, Allotype ♀ May 1895, 7 ♂ 14 ♀ Paratypes, various dates April to June".
flava, *Pieris sisymbri* Edwards. Apr. 1883. Butt. N. Amer. 2(11): [67]; plate [15], fig 5. ♀ described. No locality, series data nor dates given.
flavitincta, *Pieris sisymbrii* Comstock, J. A. 20 Feb. 1924. Bull. Sou. Calif. Acad. Sci. 23(1): 19-20; plate 7, fig. 9. ♀ described. "The example before us was captured . . . April 30th, 1911 at Cranbrook, British Columbia". Intends to propose new name for *flava* Edwards.
sisymbrii, *Pieris* Boisduval. 1852 [25 Feb. - 22 Dec.]⁷. Ann. Soc. Ent. France. 2nd Ser. 10 (2):284, no. 8. ♀ described. [California]. No series data nor dates given. Edwards, Apr. 1883, spells *sisymbri*.
transversa, *Ascia sisymbrii* Barnes & Benjamin. 8 Dec. 1926. Bull. Sou. Calif. Acad. Sci. 25(3): 88, under no. 33. "Type localities: Paradise, Cochise Co., Ariz.; Redington, Ariz.". "Number and sexes of types: Holotype ♂, Allotype ♀, 1 ♀ Paratype, all March; 1 ♂ Paratype, no date".
3. **PIERIS (PONTIA) PROTODICE BOISDUVAL & LECONTE.**
calyce, *Pieris* Edwards. Nov. 1870. Trans. Amer. Ent. Soc. 3(?) sign. 25: 189, no. 1 (Nomen nudum); 189. ♂ described. "From Nevada; in the collection of Henry Edwards". No series data nor dates given.
nasturtii, *Pieris* Edwards (Boisduval Ms. name). [9 May 1864]⁹. Proc. Ent. Soc. Phila. 2(4): 501, no. 1 (Nomen nudum); 501. ♂ & ♀ described. "San Francisco; from Dr. Behr, who informs me that it is common in some localities in the vicinity of that city". No series data nor dates given.
nelsoni, *Pieris* Edwards. Apr. 1883 Butt. N. Amer. 2(11): [71] - [72]; plate [15], figs. 6-7. "1 ♂ . . . St. Michael's Alaska, June, 1881".
occidentalis, *Pieris* Reakirt. June 1866. Proc. Ent. Soc. Phila. 6 (pp. 121-152): 133-134. ♂ & ♀ described. "Hab. - Rocky Mountains, Colorado Territory, California, (Coll. Tryon Reakirt)". No series data nor dates given.
protodice, [*Pieris*]. Boisduval & LeConte. 1829. Hist. Gén. Icon. Lepid. Chen. l'Amer. Sept. 1(5):45-46. Plate 17, figs. 1-3 published later. ♂ & ♀ described. "Elle parait au printemps et a la fin de juin aux environs de New-York. Nous en avons vu un individu pris dans le Connecticut".
vernalis, *Pieris* Edwards. [9 May 1864]⁹. Proc. Ent. Soc. Phila. 2(4): 501, no. 2 (Nomen nudum); 2 (4):501-502. ♂ & ♀ described. "In the collection of Mr. Geo. Newman and Mr. Wilt are several specimens, taken, as I am informed, at Red Bank, New Jersey, in the month of May". "There is also in the Society's collection a pair from the Rocky Mountains, that appear to be identical with it".
4. **PIERIS (PIERIS) NAPI (LINNAEUS).**
acadica, *Pieris napi* Edwards. June 1881. Papilio 1(6):86-88 (in pt.), sub no. 1; p. 98, no. 1 of no. 3; p. 99; plate 3, figs. 10-11. It appears that one pair was from Southern Newfoundland and was taken in the last week in July, it also appears another set (1 ♂ 2 ♀) had emerged from pupae in August and was from the same locality.
aestiva, *Pieris napi oleracea* Edwards. June 1881. Papilio 1(6):86-88 (in pt., Nomen nudum), sub no. 1; 1(6):89-95 (in pt.) sub no. 3; 1(6):95-98 (in pt.), sub no. 4; 1(6):98, no. 3 of no. 3;

- 1(6):99; plate 3, figs. 15-16. ♂ & ♀ described. "New York" (see figs. explanation, p. 99). "summer brood". No series data given.
- arctica*, *Pieris napi frigida* Verity. 1905-1911. Rhopal. Palaearctica: pp. 333-334 (in pt., cites figs 32-33 on plate XXXII and figs. 16-17 on plate LXVII as *P. n. f. arctica*); plate XXXII, figs. 32-33; plate XXXII explanation page, figs. 32-33 (gives as *P. n. frigida*); plate LXVII, figs. 16-17; plate LXVII explanation page, figs. 16-17 (gives as *P. n. arctica*); p. xxviii (cites figs. 31-33 & 36-37 on plate XXXII and figs. 16-17 on plate LXVII, gives as *P. n. f. arctica*). "31 . . . ♂ (ile d'Yesso, Japon)". "32 . . . ♂ (Norvege sept.)". "33 . . . ♂ (Nulato, Alaska)". "36 . . . ♀ (Nulato, Alaska)". "37 . . . ♀ (Finmark, Scandinavie)". "16 . . . ♀ (Saltdalen, Norvege sept.)". "17 . . . ♀ (Laponie)". Figs. 31, 33, 36: [coll. de Joannis]. Fig. 32: [coll. Stefanelli]. Fig. 37: [coll. Obth.] Fig. 16: [coll. Mourray]. Fig. 17: [coll. Leach]. No series data nor dates given.
- borealis*, *Ganoris oleracea* Grote. Nov. 1873. Bull. Buffalo Soc. Nat. Sci. 1(4) sign. 24:185. "months of June and July, on the Island of Anticosti". No series data nor sex given.
- casta*, *Pontia* Kirby, W. 1837. In J. Richardson. Fauna Boreali-America (4):288, no. 1; plate 3, fig. 1. "Three specimens taken in Lat. 65°". No sex given.
- castoria*, *Pieris* Reakirt. [11 June 1866] - [13 Feb. 1867]⁹. Proc. Acad. Nat. Sci. Phila. [18](3):238, no. 2. ♂ described. "Hab. - California. Coll. Tryon Reakirt". No series data nor dates given.
- cottlei*, *Pieris napi castoria* Gunder. 6 July 1925. Ent. News 36(7):197-198, no. 9; plate 5, fig. 9; Holotype ♂: "(author's Coll.), Anderson Springs, Lake County, California, May 5, 1919".
- cruciferarum*, *Pieris* Boisduval. 1836 [in or post Apr.]¹⁰. Hist. Nat. Ins. Spec. Gén. Lepid. 1 (text in 1):519, no. 119. ♂ described. "dans les provinces septentrionale des Etats-Unis". No series data nor dates given.
- flava*, *Pieris napi pallida* Edwards. June 1881. Papilio 1(6):89-95 (in pt., unnamed), sub no. 3; 98, sub no. 2 of no. 3. "Washington Terr[itory]". "One of these [a ♀] is yellow on the upper side". No date given.
- flava*, *Pieris napi venosa* Edwards. June 1881. Papilio 1(6):88-89 (in pt., unnamed), sub no. 2; 98, sub no. 1 of no. 2. Fig. 7 of plate 2 (although not so named in plate explanation, p. 99) appears to be *flava*. "A large percentage of female *Venosa* are yellow on the upper side". No locality, series data nor dates given.
- frigida*, *Pieris* Scudder. Sept. 1861. Proc. Boston Soc. Nat. Hist. (8(?) sign. 12:181-182. "Two . . . males . . . two females". "on Caribou Island, Straits of Belle Isle". No dates given.
- hulda*, *Pieris* Edwards. Sept. 1869. Trans. Amer. Ent. Soc. 2(?) sign. 48:370. "From Kodiak, 1 ♂. Coll. of Henry Edwards". No date given.
- hyemalis*, *Pieris napi oleracea* Edwards. June 1881. Papilio 1(6):88-89 (in pt., Nomen nudum), sub no. 2; 89-95 (in pt.), sub no. 3; 95-98 (in pt.), sub no. 4; 99; plate 2, fig. 8. ♂ & ♀ described. Directly and indirectly cites material from New Hampshire, Massachusetts, Lake Superior area and Mt. Hood, Oregon. No series data nor dates given.
- iberides*, *Pieris* Boisduval. [1869, pre 1 Nov.]¹¹. Ann. Soc. Ent. Belgique 12 (in 1):39, no. 9. ♂ & ♀ described. [California]. No series data nor dates given.
- macdunnoughii*, *Pieris napi* Remington. 17 Sept. 1954. The Lepid News 8(3-4):75. A new name for *Pieris napi pseudonapi* Barnes & McDunnough, 5 Dec. 1916. See *pseudonapi* for series data.
- marginalis*, *Pieris* Scudder. Sept. 1861. Proc. Boston Soc. Nat. Hist. 8(?) sign. 12:183. "(1 ♂, 1 ♀) which are in the Museum of Comparative Zoology". The male . . . from Gulf of Georgia, and the female from Crescent City, California". No dates given.

- microstriata*, *Pieris napi* Comstock, J. A. 12 Sept. 1924. Bull. Sou. Calif. Acad. Sci. 23 (4):125. Holotype [♂]: "Eldredge, Sonoma County, California. March 13, 1911". Allotype [♀]: "same locality and on the same date". "Paratype; one male - same locality and date".
- mogollon*, *Pieris napi* Burdick. 28 Sept. 1942. Can. Ent. 74 (8):154-155. Holotype ♂: "Mogollon Range, Catron Co., New Mexico, 5-7-40. No. 5222 in the Can . . . Nat . . . Coll . . . , Ottawa". Allotype ♀: "same data". "Paratypes. 2 ♂ , same data; 3 ♂ , Sierra Blanca, Lincoln Co., N. M., 5-25-40; all in the Can . . . Nat . . . Coll . . . , Ottawa. 1 ♂ , Mogollon Range, Catron Co., N. M., 5-7-40 and 1 ♀ , Sierra Blanca Range, Lincoln Co., N. M., 5-20-40; in the U . . . S . . . Nat . . . Mus . . . Fifty-six paratypes from the above locations in the collection of the author, from which other museums will be supplied".
- napi*, [*Papilio*]. [*Danaus*]. [*Candidus*] Linnaeus. 1758. Syst. Nat. 10th. Ed. 1:468, no. 60. No locality, series data, sex nor dates given. Edwards, June 1881, spells *napae*.
- nasturtii*, *Pieris* Boisduval. [1869, pre 1 Nov.]¹¹. Ann. Soc. Ent. Belgique (12) (in 1):38-39, no. 7. ♂ described. "dans les champs decouverts au pied de la Juba". "Nous n'avons vu que des males". No series data dates given. A homonym of *Pieris nasturtii* Edwards, [9 May 1864].
- ochsenheimeri*, *Pieris* Staudinger. End Apr. 1886. Ent. Zeitung Stettin 47 (4-6):199-200. ♂ & ♀ described. "wo sie die beiden Haberhauer in Anzahl Ende Juni bei Namagan, jedenfalls hoch in den Gebirgen gefangen hatten. Auch Maurer sandte mir in demselben Jahre ein im Alai-Gebirge (sudlich von Margelan) gefangenes + ein". No series data given.
- oleracea*, *Pontia* Harris. 10 July 1829. The New England Farmer & Horticultural Jour. 7 (51):402. "Habitat . . . in New Hampshire, and Massachusetts". No series data nor sex given. "two broods in a season": [May-June - August].
- pallida*, *Pieris* Scudder. Sept. 1861. Proc. Boston Soc. Nat. Hist. 8 (?) sign. 12:183. "five specimens (3 ♂ , 2 ♀), which are in the Museum of Comparative Zoology". "Gulf of Georgia". No dates given.
- pallidissima*, *Pieris napi* Barnes & McDunnough. 5 Dec. 1916. Contrib. Nat. Hist. Lepid. N. Amer. 3 (2):59; 142; plate 6, figs. 4-5 & 10. "second generation (July, August)". "type ♂ and ♀ from Provo, Utah". No series data given.
- pseudobryoniae*, *Pieris napi frigida* Verity. 1905-1911. Rhopal. Palaearctica: p. 146 (cites figs. 46-37 on plate XXXII, gives as *P. n. f. pseudobryoniae*); plate XXXII, figs. 36-37; plate XXXII explanation page, figs. 36-37 (gives as *P. n. frigida*); p. xxviii (cites only fig. 37, gives as *P. n. f. arctica pseudobryoniae*). "36 . . . ♀ (Nulato, Alaska) [coll. de Joannis]". "37 . . . ♀ (Finmark, Scandinavie) [coll. Obth.]". No series data nor dates given.
- pseudoleracea*, *Pieris napi frigida* Verity. 1905-1911. Rhopal. Palaearctica: p. 146; plate XXII, fig. 38; plate XXXII explanation page, fig. 38; p. xxviii. "38 . . . ♂ (Labrador) [e coll. Boisduval in coll. obth.]". No series data nor dates given.
- pseudonapi*, *Pieris napi* Barnes & McDunnough. 5 Dec. 1916. Contrib. Nat. Hist. Lepid. N. Amer. 3 (2):57; 142; plate 6, figs. 1-3. "type ♂ and ♀ taken at Silverton, Colo . . . in the last week of July". No series data given. A homonym of *Pieris melete pseudonapi* Verity, 1905-1911.
- resedae*, *Pieris* Boisduval. [1869, pre 1 Nov.]¹¹ Ann. Soc. Ent. Belgique 12 (in 1):38-39, no. 8. ♀ described. "Nous ne connaissons cette espee que par un seul individu femelle pris . . . sur les bords du Sacramento". No date given.
- venosa*, *Pieris* Scudder. Sept. 1861. Proc. Boston Soc. Nat. Hist. 8(?)

- sign. 12:182-183. "twenty specimens (5 ♂, 15 ♀), brought to the Museum of Comparative Zoology, from San Mateo and Mendocino city, California". No dates given.
- virginiensis*, *Pieris* Edwards. Jan. 1870. Trans. Amer. Ent. Soc. 3(?) sign. 2:10, no. 5 (Nomen nudum); 13-14. ♂ & ♀ described. "Not uncommon in the Kanawha district [West Virginia] in the month of May, and there replacing *Oleracea*. I have received from Mr. Saunders occasionally specimens taken by him at London, Canada". No series data given.
- virginiensis*, *Pieris napi oleracea byemalis* Edwards. June 1881. Papilio 1(6):95-98 (in pt.), sub no. 4; 98, under no. 2 of no. 2. "... *Virginiensis* . . . has become a true species, although unquestionably, in a higher latitude, it appears as an occasional aberration only of *Oleracea*". Specimen data is obscure. A homonym of *virginiensis* Edwards, Jan. 1870.
5. PIERIS (PIERIS) RAPAE (LINNAEUS).
- aestivus*, *Pieris rapae* Verity. 16 May 1913. Jour. Linn. Soc. (London), Zool. 32(215):177-178. "summer brood". No locality nor series data given.
- immaculata*, *Pieris rapae* De Selys-Longchamps. 1857. Ann. Soc. Ent. Belgique 1 (in 1):5, under no. 5. [Belgique]. No series data, sex nor dates given.
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- novangliae*, *Ganoris rapae* Scudder. Apr. 1872. Can. Ent. 4(4):79. "Two of my specimens were taken in June and July, 1869 — one . . . in Shelbourne, N[ew] H[ampshire] . . . the other . . . in Waterville, M[aine], and all are males".
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¹Amer. Nat. 6: 354-359. Work is reviewed in June 1872 number.

²Hemming, 1937. Hubner 1:327-437.

³The work title page signature date qualified by preface signature date on page vi.

⁴Title page signature date qualified by preface signature on page 6.

⁵Hemming, 1937. Hubner, 1:146-324.

⁶Hemming, 1931. Proc. Ent. Soc. London. Ser. A. 6: 42-45. Gives actual dates of publication for the parts of Edwards's Butt. N. Amer., (Ser. 1).

⁷ Tome 10 title page signature date qualified by the meeting date of 25 Feb. (p. 275) and the evidence indicating that the tome to page 489 was published before the meeting of 22 Dec. (p. lxxxii in Bulletin).

⁸Proc. Ent. Soc. Phila. 1864. 3: p. 695. Notes that No. 4 of Vol. 2 of Proc. Ent. Soc. Phila. was received at 9 May 1864 meeting.

⁹Index Scient. Cont. Jour. & Proc. Acad. Nat. Sci. Phila., 1812-1912: pp. xii-xiii. Gives dates of receipt for various parts of the early volume of the Proceedings.

¹⁰ Tome 1 title page signature date qualified by preface date (p. xii).

¹¹Trans. Ent. Soc. London 1869: p. xix (in Proc.). Notes receipt of Tomes 1-12 of the Ann. Soc. Ent. Belg. at 1 Nov. meeting. Tome 12 title page signature date: 1868-1869. I assume the date is fixed on the publication of Tome 12. I have no data for the separate except that its title page signature date is 1869.